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09/870,305	05/30/2001	Shawn E. O'Hara	81382/JDL	7639

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EXAMINER

NGHIEM, MICHAEL P

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/870,305

Applicant(s)

O'HARA ET AL.

Examin r

Michael P Nghiem

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with th correspond nce address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-11 is/are allowed.
- 6) ☒ Claim(s) 22,23,26 and 28 is/are rejected.
- 7) ☒ Claim(s) 12,24,25,27,29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

The Amendment filed on October 2, 2003 has been acknowledged.

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Correction of the following is required:

- claims 12 and 30, "...and the second circuit selects delays that are offset by a period substantially equal to a selected delay between an odd row and an even".

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second circuits (claims 1, 5) must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claims 12 and 26 are objected to because of the following informalities:
- claim 12, after "even" (line 4) should insert -- row --.
  - claim 26, "a fine adjustment circuit" (line 2) should be -- the fine adjustment circuit --; "a plurality of delays" (line 3) should be -- the plurality of delays -- .
- Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22, 23, 26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Pham et al. (US 5,585,836).

Regarding claim 22, Pham et al. discloses a method for producing an electronic printhead (250), having pixel alignment circuitry (Fig. 4), by the steps of:

- providing a substrate (200) having a plurality of printing elements (elements on 250, Fig. 4) representing an image exposure line (image on 2), with associated driver circuitry (310), coupled to an interface board (400, 700, Figs. 5, 7, 9), and timing means (clock 212) for selectively activating said printing elements for exposing an image exposure line, one at a time, for a preselected exposure period (data is synchronized by clock, Fig. 6), each of said printing elements representing a pixel within an image exposure line (column 7, lines 51-53);

- creating, a coarse adjustment circuit (206) on said interface board, said coarse adjustment circuit having circuitry that aligns image exposure line pixel data in integral numbers of lines (odd and even number lines, Fig. 6);

- forming a fine adjustment circuit (204) located at least partially on said substrate (Fig. 4), said fine adjustment circuit providing a plurality of delays (two bit dot shifts on 210, 211) to each of said printing elements, wherein each of said delays is a fraction of an exposure period of said timing means corresponding to a fraction of a pixel pitch (column 10, lines 55-57); and

- selecting one of the delays in accordance with a predetermined parameter (via 206, 207).

Regarding claim 23, Pham et al. discloses forming said fine adjustment circuit with a software accessible register (314, 316) for delay selection of each printing element.

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Regarding claim 26, Pham et al. discloses forming the fine adjustment circuit wherein the plurality of delays are modifiable to allow for different levels of pixel fine adjustment (column 10, lines 39-52).

Regarding claim 28, Pham et al. discloses selecting said delays such that said delays are repeated with a first delay following a last delay forming a repeated delay circuit from multiples of said delays (multiple bit shifts on 210, 211).

***Allowable Subject Matter***

5. Claims 24, 25, 27, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 12 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Claims 1 and 3-11 are allowed.

### ***Reasons For Allowance***

8. The combination or method as claimed wherein a first circuit common to a plurality of LED elements and a second circuit selecting one of a set of a delays that improves linearity of the pixels within the line by a fraction of a pixel pitch (claim 1) or forming the fine adjustment circuit wherein the software accessible register can be loaded via a JTAG serial data path (claim 24) or the fine bow correction circuit forms the fine bow correction circuit such that it is located at least partially on the interface board and provides at least one circuit trace that carries a plurality of signals to the fine bow correction circuit on the substrate, wherein the signals are not concurrently active (claim 27) or providing the elements arranged in a plurality of rows and wherein the fine adjustment circuit selects different delays for different rows (claim 29) is not disclosed, suggested, or made obvious by the prior art of record.

### ***Response to Arguments***

9. Applicant's arguments filed on October 2, 2003 have been fully considered but they are not persuasive.

With respect to the objections to the specification and drawings, Applicants argue that all obvious informalities have been corrected.

Examiner's position is that the specification is not found to support the limitation of

"...and the second circuit selects delays that are offset by a period substantially equal to

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a selected delay between an odd row and an even" (claims 12, 30). In particular, the specification (page 35, lines 10-22) discusses that odd and even pixels are offset above or below one another but not by "a period substantially equal to a selected delay between an odd row and an even".

Further, even though Fig. 9a shows a combination of two circuits (claims 1, 5), it is unclear which section belongs to a first circuit and which section to a second circuit.

With respect to the 35 USC 102 rejections, Applicants argue that claim 22 was amended to include the subject matter of claim 1.

Examiner's position is that claim 22 does not include the first circuit and improving the linearity of the pixels as recited in claim 1. Thus, claim 22 is not allowable as discussed above.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not



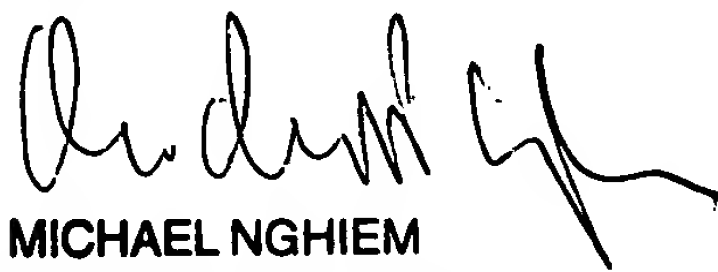
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. The examiner can normally be reached on M-H from 6:30AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached at (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**MICHAEL NGHIEM**  
**PRIMARY EXAMINER**  
Michael Nghiem

January 21, 2004